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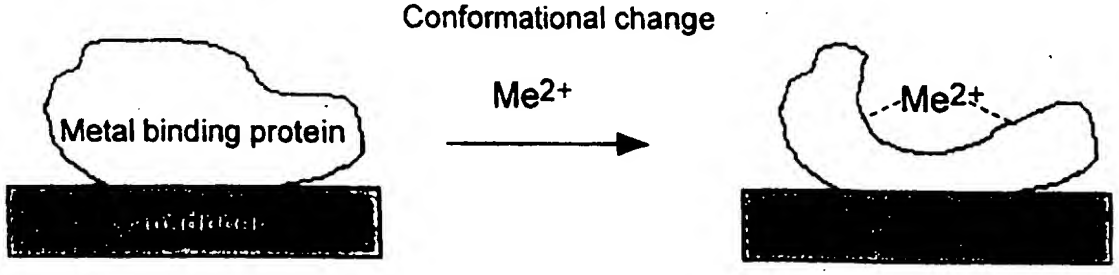

(57) Abstract

This invention relates to a metal ion specific capacitance sensor with exceptional sensitivity and wide operating range. It is versatile because different kinds of recognition elements can be immobilized directly in a self-assembling monolayer substantially completely covering the surface of the measuring noble metal electrode. The electrode then becomes selective to those metal ions in the solution that show affinity to the recognition element on the surface. Compared to previously described electrochemical sensors, the sensor according to the present invention shows many orders of magnitude better sensitivity because of the unique measuring principle.